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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/601,655	08/04/2000	OSAMU SAKANAKA	20001081A	8304

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EXAMINER

ROBINSON, BINTA M

ART UNIT	PAPER NUMBER
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1625

DATE MAILED: 08/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/601,655	Applicant(s) SAKANAKA ET AL.	
	Examiner Binta M Robinson	Art Unit 1625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,9,10,14,19-21,23-32 is/are pending in the application.
- 4a) Of the above claim(s) 30, 32
is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,3,19-21 and 23-26 is/are rejected.
- 7) ☒ Claim(s) 9, 10, 14, 27-28 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/21/2004</u> . | 6) <input type="checkbox"/> Other: ____. |

Detailed Action

The 112, first paragraph rejections of claim 14 and the 112, second paragraph rejection of claim 1 are withdrawn in light of applicant's remarks and amendment filed 5/21/04.

The Elected group I invention dated 5/23/03 drawn to the compound of formula I where all of the radicals except R2 are as claimed, and where R2 can be any radical claimed except quinoline acid residue having a substituent, a pyrimidine carboxylic acid residue having a substituent, a process of producing the compound described above, and a method of for preventing the appearance and proliferation of fungi with the compound described above is made modified below to read on claims 1,3, 9, 10, 14, 19-21, 23-29, 31. The unelected portions of claims 1,3, 9, 10, 14, 19-21, 23-29, 31 are withdrawn from consideration. Claims 30 and 32 are withdrawn from consideration as being drawn to a non-elected invention.

(New rejections)

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 32 is rejected under 35 U.S.C. 112, first paragraph, because the specification, does not reasonably provide enablement for the method of preventing the appearance or proliferation of *Pyricularia oryzae*, *Colletotricum lagenarium* or

Pseudoperonocpora cubensis on any industrial products or in the course of production of industrial products. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. The claims as recited are broader than the scope of enablement.

The applicant is referred to *In re Wands*, 858 f.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988) which includes the incorporation of the 8 factors recited in *Ex parte* foreman 230 USPQ 546 (Bd. Of App. And Inter 1986).

There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is “undue”. These factors include 1) the breadth of the claims, 2) the nature of the invention, 3) the state of the prior art, 4) the level of one of ordinary skill, 5) the level of predictability in the art 6) the amount of direction provided by the inventor 7) the existence of working examples, and 8) the quantity of experimentation needed to make or use the invention based on the content of the disclosure. In *re Wands*, 858 F. 2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

In terms of the breadth of the claims, R2 encompasses a much wider Markush grouping of radicals than those tested in the specification.

1) The state of the prior art is that the development of antifungal agents which have high antifungal activity and excellent photostability has been particularly desired, particularly for use on industrial products. Antifungal agents such as zeolites, Al₂O₃, SiO₂,

montmorillonite, clay, mica, diatom, pumice, rice husk, wood powder have been used as antifungal agents on industrial products. See Ca 138:149036. Mercaptopyridine-N-oxide derivatives have also been used as antifungal agents on industrial products. See 138:233399. N-isothiazylurea derivatives have also been found to be useful as antifungal agents for industrial products or in the manufacturing processes of industrial products. See Ca 130:52409.

2) the nature of the invention is that these compounds are used to treat industrial products with antifungal agents 5) level of predictability in the art is low because no compounds are tested on industrial products in the specification. The compounds tested show a wide ranging difference in antifungal activity for similar structures. For example, compounds 53 and 56 only differ at the R2 radicals in Table 2 where for compound 53, R2 is NO₂ and for compound 56, R2 is (CH₃)₂N. Yet the antifungal activity for compound 53 for an 0.025 amount of sample used is 12, whereas the antifungal activity for compound 56 for an 0.025 amount of sample used is 0. The level of predictability regarding antifungal activity is low. 7) the existence of working examples.

The applicant doesn't test the any of the claimed compounds as antifungal agents on industrial products. In terms of the 8th Wands factors, undue experimentation would be required to make or use the invention based on the content of the disclosure due to the breadth of the claims, the level of predictability in the art of the invention, and the poor amount of direction provided by the inventor. Taking the above factors into

consideration, it is not seen where the instant claim is enabled by the instant application.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3, 19, 20, 21, 23, 24, 25, 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. In claim 1, The phrase “benzoic acid residue” in line 5, page 2 of the amendment dated 5/21/04, the phrase “nicotine acid residue” in lines 5-6 of claim 1, page 5, and the phrase “quinoxalinecarboxylic acid residue” in line 6, page 5 of the amendment dated 5/21/04 are indefinite. In the Meriam Online Dictionary, a “residue” is defined as “something that remains after a part is taken, separated, or designated”. The exact structure of the benzoic acid, nicotine acid, and quinoxalinecarboxylic acid moieties is ambiguous. The point of attachment of these moieties to the base molecule is also unclear.

B. The phrase “hydroxybenzoic acid residue, a nicotinic acid residue” in line 2 of claim 3, page 3, of the amendment dated 6/25/04 is indefinite. In the Meriam Online Dictionary, a “residue” is defined as “something that remains after a part is taken, separated, or designated”. The exact structures of the hydroxybenzoic acid residue and

nicotinic acid residue are ambiguous. The point of attachment of these moieties to the base molecule is also unclear.

C. In claim 19, line 5, page 4 of the amendment dated 6/25/04, the phrase "compound UK-2" is indefinite because it is a trade name. It is suggested that the applicant depict the formula for the compound of UK-2.

D. In claim 19, line 6, page 4 of the amendment dated 6/25/04, the phrase "chlorination product" is indefinite and ambiguous. What chlorination product results? It is suggested that the applicant delete the phrase "chlorination product" and replace it with the phrase "imino chloro compound" as found on page 11, line 20.

E. In claim 20, line 5, page 4, of the amendment dated 6/25/04, the phrase "3-hydroxy-4-methoxypicolinic acid residue" is ambiguous. In the Meriam Online Dictionary, a "residue" is defined as "something that remains after a part is taken, separated, or designated". The exact structure of the 3-hydroxy-4-methoxypicolinic acid residue is ambiguous. The point of attachment of these moieties to the base molecule is also unclear.

F. In claim 21, lines 5-6, page 5 of the amendment dated 6/25/04, the phrase "a benzoic acid residue", "a nicotine acid residue", "or a quinoxalinecarboxylic acid residue" is indefinite. In the Meriam Online Dictionary, a "residue" is defined as a "something that remains after a part is taken, separated, or designated". The exact structures of the benzoic acid, nicotine acid, and quinoxalinecarboxylic acid moieties are ambiguous. The point of attachment of these moieties to the base molecule is also unclear.

G. Claim 23 recites the limitation "aromatic carboxylic acid residue" in line 2. There is insufficient antecedent basis for this limitation in the claim.

H. In claim 23, lines 2-3 and 3-8, the phrases "aromatic carboxylic acid residue", "hydroxybenzoic acid residue", "picolinic acid residue", "a nicotinic acid residue", "a quinolinecarboxylic acid residue", "a pyrimidinecarboxylic acid residue", and a "quinoxalinecarboxylic" are also indefinite. In the Meriam Online Dictionary, a "residue" is defined as a "something that remains after a part is taken, separated, or designated". The exact structure of the hydroxybenzoic acid, nicotine acid, and quinoxalinecarboxylic acid moieties is ambiguous. The point of attachment of these moieties to the base molecule is also unclear.

I. Claim 23 recites the limitation "aromatic carboxylic acid residue" in line 2. There is insufficient antecedent basis for this limitation in the claim.

J. In claim 24, lines 2-3, the phrase "the aromatic carboxylic acid residue" and the phrase "picolinic acid residue" are ambiguous. In the Meriam Online Dictionary, a "residue" is defined as a "something that remains after a part is taken, separated, or designated". The exact structure of the benzoic acid, nicotine acid, and quinoxalinecarboxylic acid moieties is ambiguous. The point of attachment of these moieties to the base molecule is also unclear.

K. In claim 25, lines 2-4, the phrase "aromatic carboxylic acid residue", "picolinic acid residue" in lines 3-4, are ambiguous.

In the Meriam Online Dictionary, a "residue" is defined as a "something that remains after a part is taken, separated, or designated". The exact structure of these

moieties is ambiguous. The point of attachment of these moieties to the base molecule is also unclear.

L. In claim 26, lines 2-4, the phrase "aromatic carboxylic acid residue" and the phrase "picolinic acid residue" is indefinite.

In the Meriam Online Dictionary, a "residue" is defined as a "something that remains after a part is taken, separated, or designated". The exact structure of these moieties is ambiguous. The point of attachment of these moieties to the base molecule is also unclear.

M. Claim 23 recites the limitation "pyrimidinecarboxylic acid" in line 6. There is insufficient antecedent basis for this limitation in the claim.

N. Claims 29 and 31 are indefinite because it is not clear which host the compounds are being added to in order to prevent the appearance and the proliferation of *Pyricularia oryzae*, *colletotricum lagenarium* or *pseudoperonocpora cubensis*.

O. In claim 31, line 4, page 8, the phrase "industrial products" is ambiguous. What industrial products is the applicant talking about?

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 29, 31 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: procedural steps that the skilled artisan would employ to prevent the appearance and the proliferation of the fungi. Is the active agent placed on the soil, placed on the plant, etc?.

Claims 9, 10, 14, 27-28 are objected to because they are based on a rejected claim.

The IDS filed 8/4/2000 has been considered.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binta M. Robinson whose telephone number is (571) 272-0692. The examiner can normally be reached on M-F (9:30-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Celia Tsang can be reached on 571-272-0562.

A facsimile center has been established. The hours of operation are Monday through Friday, 8:45 AM to 4:45 PM. The telecopier numbers for accessing the facsimile machine are (703)308-4242, (703)305-3592, and (703)305-3014.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)-272-1600.

BMR
August 23, 2004


JOSEPH K. MCKANE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600